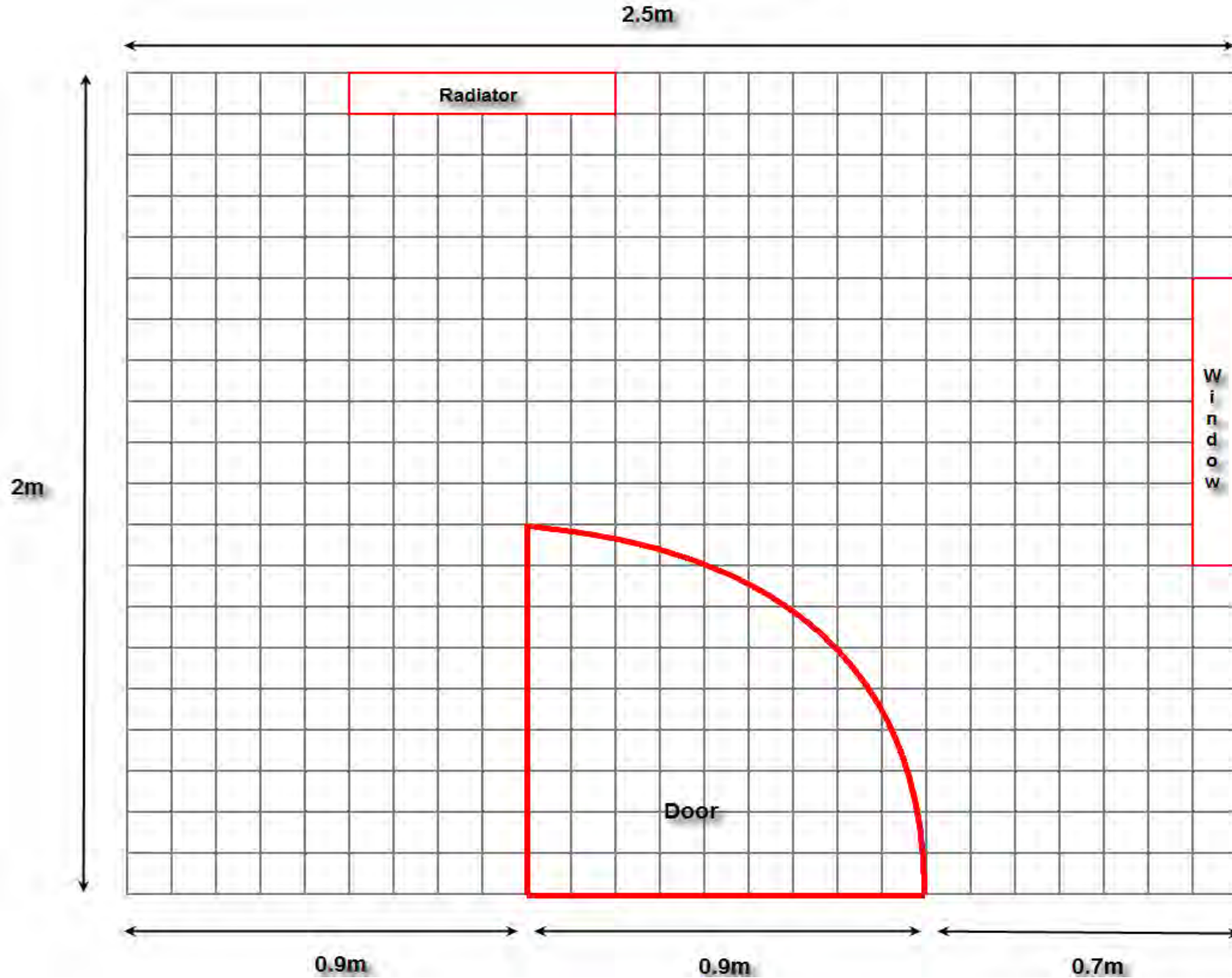


Scale plan of a small kitchen



Data sheet for kitchen design task

List of kitchen items: These are the appliances and units which are used in the kitchen. Their dimensions and other information are shown in the table below.



oven



fridge freezer



washing machine



sink unit



large 2 drawer unit



single cupboard unit



small 3 drawer unit



double cupboard unit

	Height mm	Width mm	Depth mm	Other Information
Appliances				
Oven	900	500	600	Requires a 25mm gap at either side to heat escape
Fridge freezer	1750	650	650	
Washing machine	850	600	550	
Units				
Sink unit	900	1000	600	
Double cupboard unit	900	800	600	
Single cupboard unit	900	400	600	
Large 2 drawer unit	900	1100	600	
Small 3 drawer unit	900	500	600	

You must show all your working out

Task 1

1. Which kitchen item on the data sheet has a width of 600mm?
2. A blind is needed for the kitchen window. It needs to be wider than the window by 5cm on each side. What width does the blind need to be?
3. Skirting boards need fixing to the bottom of the walls all the way around the kitchen except where the door is. Skirting boards are sold in 3m lengths. How many 3m lengths will be needed?
4. Before the kitchen appliances and units can be fitted into the kitchen the floor needs to be tiled. Each tile is 30cm by 30cm. A box contains 9 floor tiles. How many boxes of tiles are required to tile the whole kitchen floor? Show checking of your calculation.
5. A box of tiles is sold for £38.42 without VAT. How much will you be required to pay for boxes of tiles to cover the whole kitchen floor?
6. The VAT is charged at 15% of the total cost. Calculate how the total cost of the tiles including VAT. Show checking of your calculation.

7. On the scale diagram draw the likely positions of the following: sink unit, double cupboard unit and single cupboard unit.

8. The positions of the washing machine (1), oven (2) and fridge freezer (3) from the list of kitchen items still need to be put on the plan. All three appliances need to go in the kitchen. Using numbers 1-3 show the space each appliance will fit into.

9. Five people are employed to fit the kitchen at the CCDE Radio Station. Their wages per week are as follows:
 - The clerk of works: £400
 - The surveyor: £650
 - The specialist engineer: £840
 - The subcontractor: £2860
 - The carpenter: £580

a) Calculate the mean wage per week?

b) What is the range of the wages paid every week?

c) Using the graph paper supplied, draw a bar chart of the wages of the employees comparing the wages with the mean wage.

10. Explain the role of one of the employees using complete sentences.

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You must show all your working out

Task 2

1. Many companies pay rent for office space. The table below shows the cost of rents, in £ per m² per week, for some offices in different cities.

City	Rent per m ²
Birmingham	£270
London	£300
Sheffield	£180
Glasgow	£158
Bradford	£210
Coventry	£190
Liverpool	£178

(a) In which city will you have to pay the highest rent?

(b) What is the range of the costs?

(c) The office in Glasgow has an area of 100m². What is the total cost of the rent for this office for a week?

2. The Health and Safety Policy says that every office worker should have a minimum working space of 12m².

(a) An office has a total of 165m² of working space. How many office workers is there space for in this office?

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(b) An office is needed for 17 office workers. What is the least amount of total working space needed for these 17 workers?

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Functional Skills criteria – highlighting indicates main skills covered in this resource, although these will vary with the student group and how the resource is used by the teacher. The process skills are key to Functional Maths and must always be developed and stressed during teaching.

Process Skills (all levels)		
Representing – selecting the mathematics and information to model a situation	Analysing – processing and using mathematics	Interpreting – interpreting and communicating the results of the analysis
Skill Standards (Level 2)		
<ul style="list-style-type: none"> understand routine and non-routine problems in familiar and unfamiliar contexts and situations identify the situation or problems and identify the mathematical methods needed to solve them choose from a range of mathematics to find solutions 	<ul style="list-style-type: none"> apply a range of mathematics to find solutions use appropriate checking procedures and evaluate their effectiveness at each stage 	<ul style="list-style-type: none"> interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations draw conclusions and provide mathematical justifications
Skill Standards (Level 1)		
<ul style="list-style-type: none"> understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine identify and obtain necessary information to tackle the problem select mathematics in an organised way to find solutions 	<ul style="list-style-type: none"> apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes use appropriate checking procedures at each stage 	<ul style="list-style-type: none"> interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations
Skill Standards (Entry 3)		
<ul style="list-style-type: none"> understand practical problems in familiar contexts and situations begin to develop own strategies for solving simple problems select mathematics to obtain answers to simple given practical problems that are clear and routine 	<ul style="list-style-type: none"> apply mathematics to obtain answers to simple given practical problems that are clear and routine use simple checking procedures 	<ul style="list-style-type: none"> interpret and communicate solutions to practical problems in familiar contexts and situations
Coverage and Range statements (indicative only)		
<p>Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels & Adult Numeracy standards.</p>		
Level 2		
<ul style="list-style-type: none"> understand and use positive and negative numbers of any size in practical contexts carry out calculations with numbers of any size in practical contexts, to a given number of decimal places understand, use and calculate ratio and proportion, including problems involving scale understand and use equivalences between fractions, decimals and percentages understand and use simple formulae and equations involving one or two operations 	<ul style="list-style-type: none"> recognise and use 2D representations of 3D objects find area, perimeter and volume of common shapes use, convert and calculate using metric and, where appropriate, imperial measures collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate. use statistical methods to investigate situations use probability to assess the likelihood of an outcome 	
Level 1		
<ul style="list-style-type: none"> understand and use whole numbers and understand negative numbers in practical contexts add, subtract, multiply and divide whole numbers using a range of strategies understand and use equivalences between common fractions, decimals and percentages add and subtract decimals up to two decimal places solve simple problems involving ratio, where one number is a multiple of the other use simple formulae expressed in words for one- or two-step operations 	<ul style="list-style-type: none"> use data to assess the likelihood of an outcome solve problems requiring calculation, with common measures, including money, time, length, weight, capacity & temperature convert units of measure in the same system work out areas and perimeters in practical situations construct geometric diagrams, models and shapes extract and interpret information from tables, diagrams, charts and graphs collect and record discrete data and organise and represent information in different ways find mean and range 	
Entry 3		
<ul style="list-style-type: none"> add and subtract using three-digit numbers solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10 round to the nearest 10 or 100 understand and use simple fractions understand, estimate, measure and compare length, capacity, weight and temperature 	<ul style="list-style-type: none"> understand decimals to two decimal places in practical contexts recognise and describe number patterns complete simple calculations involving money and measures recognise and name simple 2D and 3D shapes and their properties use metric units in everyday situations extract, use and compare information from lists, tables, simple charts and simple graphs 	

References: Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.*
<http://www.ofqual.gov.uk/files/2009-11-functional-skills-criteria-for-mathematics.pdf>
 Further functional skills documents available at <http://www.ofqual.gov.uk/2578.aspx>